IN THE DRAWINGS

Figures 1 and 2 are amended to correctly designate the figures as "Prior Art," and Figure 3 has been amended to correct the term "usr" in block 310 to read as "user" as requested by the Examiner. The amendments are submitted in the form of "Replacement Sheets" in compliance with 37 CFR 1.121(d). Approval is respectfully requested.

REMARKS

Claims 1-11 were examined and reported in the Office Action. Claims 1-11 are rejected. Claims 1, 3 and 5-8 are amended. Claims 2, 4, and 9-11 are cancelled. Claims 1, 3 and 5-8 remain.

Applicant requests reconsideration of the application in view of the following remarks.

It is asserted in the Office Action that corrected drawing sheets in compliance with 37 CFR 1.121(d) are required. In response, Applicant submits corrected drawings for Figures 1, 2 and 3, in compliance with 37 CFR 1.121(2). Accordingly, approval is respectfully requested.

It is asserted in the Office Action that Claims 2, 4-7 and 9-11 are objected to due to informalities. In response, Applicant has cancelled Claims 2, 4, and 9-11. Additionally, Claims 5-7 have been amended responsive to the objections noted by the Examiner.

In response to the rejection of Claims 1-11 under 35 USC 112, second paragraph, Claims 2, 4 and 9-11 have been cancelled. Additionally, Claims 1, 3 and 5-8 have been amended responsive to this rejection.

Regarding the rejection of Claims 1-11 under 35 USC 101, Claim 1 has been amended to add step (d) to provide a specific use for the stored pattern data. Regarding the Examiner's contention that nothing seems to happen to pattern data that does not match anything in the table, Applicant notes that the specifics of what happens in such a situation does not form part of the invention. Further, Applicant notes that one skilled in the art would recognize that when doing a search and no matches are found, it is well known in the art that, typically, a message is generated to that effect.

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Claims 1-11 are rejected under 35 USC 102(e) as being anticipated by US Patent No. 7,110,540 to Rajagopal et al. In response, Applicant notes that Rajagopal et al. relates to multi-pass hierarchical pattern matching. Rajagopal teaches calculating a 2 byte hash value for 6 patterns and generating a database (hash table) by using the calculated hash value as a key value. Rajagopal teaches applying information associated with a substring of a sequence of bytes to generate the key value. Rajagopal teaches comparing the key value with keys of the hash table, and if a match is found, to compare the information with corresponding information associated with a substring of a byte pattern stored in the hash table. That is to say, Rajagopal is equal to the description of the prior art as described by Applicant.

In a searching method for 'dcaaa' as taught by Rajagopal, a search of the word 'dc' is carried out as follows. The search of the word 'dc' consists of searching the word 'dc', then detecting pointers (key values) of two words possibly subsequent to 'dc', and comparing 'aaa' and 'ad' with the data, in sequence. Therefore, Rajagopal lacks efficiency in that the time required for data comparison increases by the increased amount of data to be compared, because the next two sentences are compared with input data in sequence after a search of 'dc'.

However, the present invention relates to a high-speed pattern storing and matching method for constructing with a simple memory lookup, designed to achieve ease in adding or updating new rules and continuous addition of new patterns for search, which can be applied to fields such as rule-based IDS or fingerprint comparison, or DNS comparison, that require a high-speed search of specific patterns from a large amount of data.

The present invention divides words from an input sentence, separately looks up the words in a hash table, and outputs information about the positions at which they are stored. By using the individual words looked up in the hash table and their position information in the hash

table, the sequence of the word can be compared to determine the whole sentence. Also, each address of the hash table has data about the previous ID (pid) and an ID (mid) of a corresponding word, and shows the connections of the words stored in the hash table. The ID of the corresponding word can be used instead of the memory address storing the ID of the word.

In the invented searching method for 'dcaaa' contained in an input packet, the searching method comprises: looking up words 'dca' and 'aa' in the first table and the second table, identifying an HTTP protocol from pid 1 and the head of the input packet if an ID for the HTTP protocol is stored in the pid of the first table, comparing the ID with the pid of the first table, determining that the input packet contains 'dca', confirming if 'dca' is connected to the next word 'aa' since pid 2 of the second table storing 'aa' is connected to mid 1. Dividing the pattern data according to the present invention is to divide words from an input sentence, and is different from portioning the byte pattern into substrings as disclosed by Rajagopal. That is, the words of the present invention are not similar to the substrings of Rajagopal. Position information according to the present invention is information about the positions at which the separated words are stored, and are different from key value as taught by Rajagopal. Accordingly, reconsideration and withdrawal of the rejection of Claims 1, 3, and 5-8 under 35 USC 102(e) as being anticipated by US Patent No. 7,110,540 to Rajagopal et al. is respectfully requested.

If the Examiner believes a telephone conference would be useful in moving the case forward, he is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly, extension of time fees.
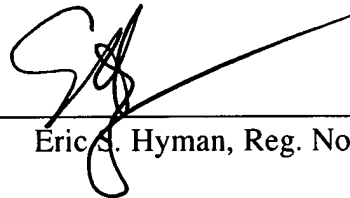
Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR, & ZAFMAN

Dated: 1/10/07

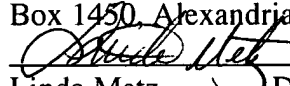By: _____
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Linda Metz   December 11, 2007